

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:
a plurality of function blocks;
a plurality of buses, each of which is
respectively connected to one of the plurality of
function blocks;
a plurality of control signal lines, each
of which is respectively connected to one of the
plurality of function blocks;
a main bus;
a bus control unit connected to the main
bus;
a bus division control unit located
between the plurality of buses and the main bus, for
connecting one of the plurality of buses to the main
bus and transmitting a control signal to a
corresponding one of the plurality of control signal
lines in accordance with a decoded result of
information supplied from the bus control unit via
the main bus, thereby controlling a corresponding
one of the plurality of function blocks.

2. The semiconductor device as claimed in
claim 1, wherein the bus division control unit
comprises:
a decoder unit for decoding the
information supplied from the bus control unit via
the main bus and generating the control signal; and
a bus dividing unit for connecting one of
the plurality of buses to the main bus, in

5

15

25

35

6. The semiconductor device as claimed in

claim 4, wherein the bus division control unit receives a transfer control signal and determines a transfer source and a transfer destination between the two function blocks in accordance with the transfer control signal.

10 7. The semiconductor device as claimed in claim 4, wherein, when an access request to one of the two function blocks is made by the bus control unit, the bus division control unit processes the access request prior to processing the transfer request.

20 8. The semiconductor device as claimed in claim 4, wherein, when an access request to one of the plurality of function blocks other than the two function blocks is made by the bus control unit, the bus division control unit processes the access request in parallel with processing the transfer request.

30 9. The semiconductor device as claimed in claim 1, wherein the bus division control unit determines whether an access made by the bus control unit is a read access or a write access based on a decoded result of information supplied from the bus control unit via the main bus, and connects one of the plurality of buses to the main bus in the access

direction as determined based on the decoded result of information supplied from the bus control unit via the main bus.

5

10. A semiconductor device comprising:
a plurality of buses;
a main bus; and
a bus division control unit located
between the plurality of buses and the main bus, for
connecting a first bus of the plurality of buses to
the main bus in accordance with a decoded result of
information on the main bus, and controlling a
transferring operation between two function blocks
connected to a second bus of the plurality of buses.

1000000.000000